

# Long Island Botanical Society

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The Quarterly Newsletter

Fall 2004

## LIBS Invaluable in Detecting New Invasions

Marilyn Jordan

Who are the people most likely to notice a new plant species in town? Why, members of the Long Island Botanical Society, of course! LIBS members have been crucial in detecting new invasive plant species (weeds) on Long Island, and in finding new occurrences of known priority weeds, including *Heracleum mantegazzianum* (Giant Hogweed), *Polygonum perfoliatum* (Mile-a-minute vine), and *Cardamine impatiens* (Narrowleaf Bittercress).

Eradication efforts are now underway for these species, and containment/suppression efforts for many others, under the auspices of the Long Island Weed Management Area (LIWMA).

The LIWMA was formed in September 2001 as a cooperative effort initiated by The Nature Conservancy, with many public and private partners, to reduce the threat posed by invasive plants to native ecosystems and species on conservation lands across Long Island.

Invasive species (most of which are nonnative) are a major cause or contributing factor in the decline of about half of imperiled species within the USA (Wilcove *et al.*, 1998). Nonnative species comprise 35 percent of the plant species in New York, more than in any other state in the continental U.S., with the possible exception of Florida (Rejmanek & Randall, 1994; Mitchell and Tucker, 1997).

New York City and Long Island have a nearly 400-year post-settlement history, during which hundreds of nonnative species have been introduced, many through the Port of New York. As a result, nonnative

plants are widely distributed and pose a serious threat to biodiversity.

Prevention—keeping new invaders out of conservation areas and off Long Island—is the most effective strategy for limiting the threat of invasive species. Our laws, policies, and public education, however, are never going to be 100 percent effective in preventing new invasions.

Once an invasive plant occupies more than two acres, eradication may require hundreds of work hours; thousands of hours may be required for infestations of greater than 25 acres (Rejmanek and Pitcairn, 2002). Clearly, early detection and eradication of new invasions while they are small is critical to success. Once a plant becomes abundant enough to be readily noticed, it is usually too late for eradication.

So LIBS members, please, we need your continued help. Any time you find a plant on Long Island that you have never seen before, and if it is not native to New York, please let

the LIWMA know about it. Pictures and specimens are preferred for confirmation, but any information will be greatly appreciated.

Contact Kathy Schwager or Marilyn Jordan at The Nature Conservancy. Contact Marilyn for a copy of the most current priority weed list.



*Cardamine impatiens* or Narrowleaf Bittercress

Photo courtesy of Ernst Horvak  
<http://www.gut-im-bild.at/pages>

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## Long Island Botanical Society

Founded: 1986 Incorporated: 1989

The Long Island Botanical Society is dedicated to the promotion of field botany and a greater understanding of the plants that grow wild on Long Island, New York.

Visit the Society's Web site  
**[www.libotanical.org](http://www.libotanical.org)**

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## Society News

**From the Editor:** With this issue, I have completed one full year as editor of the Long Island Botanical Society Newsletter, and wish to thank all those upon whom I've come to depend for assistance.

Eric Lamont and Skip Blanchard have informally reviewed manuscripts and provided botanical expertise. Barbara Conolly has provided minutes of LIBS meetings. Rich Kelly contributes a letter-perfect copy of the schedule of upcoming programs. Jenny Ulsheimer and Skip Blanchard provide field trip information. Bill Krol provides professionalism in layout design and copy editing.

Finally, special thanks go to **John Potente**, who, as newsletter editor for past three years, set high standards for this publication, and who continues to contribute in many ways. It's my great pleasure to publish, in this issue, John's fourth and final installment in his continuing story, "Tale of the Ragged Fringe" (p. 27).

Also, in this issue, you will note that most articles and submissions are related to a theme that is becoming more important to LIBS members: the role of **exotic and invasive plant species** on Long Island. See Ray Welch's observations on *Epipactis* (p. 30), Guy Tudor's note on *Cardamine* (p. 36), and the reaction of British botanists to the prevalence of Deptford Pink (p. 34).

Knowing the importance of this issue, and familiar with the Long Island Weed Management Areas' efforts to reduce and control the threat, I invited **Marilyn Jordan** to appeal to LIBS members for help. Her article is our cover story.

♦

**Member News:** LIBS wishes to welcome new members **Robin McGrath, Christine McCormick, Megs Shea, Ronald & Doris McGreevy & family, and Annemarie Costello**. Our membership continues to grow and our mailing list now exceeds 220. Thanks to Lois Lindberg for maintaining the records.

♦

LIBS member John Potente give a lecture about invasive plants on Long Island at the Islip Library on October 13 at 7 p.m. for the Seatuck Environmental Association's *Changes & Challenges* lecture series.

♦

LIBS member John Collins notes the availability of a free booklet, **"The Field Guide to Native Oak Species of Eastern North America."** To obtain a copy, e-mail [hwassick@fs.fed.us](mailto:hwassick@fs.fed.us) or phone the USDA Forest Service at 304-285-1527.

♦

Vince Puglisi and Betsy Gulotta wish to remind all LIBS members that the **Friends of Hempstead Plains** are sponsoring Friday Lunch Walks and weekend Volunteer Work Days to help restore the native prairie, remove invasive species, and collect native grass seeds. For more information, e-mail [info@friendsofhp.org](mailto:info@friendsofhp.org) or phone 516-572-7570.

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## REFERENCES

Mitchell, R. S. and G. C. Tucker. *Revised Checklist of New York State Plants. Bulletin 490.* The University of the State of New York, The State Education Department. Albany, NY 12230, 1997.

Rejmanek, M. and J. Randall, *Invasive alien plants in California: 1993 summary and comparison with other areas in North America.* Madrono 41(3):161-181, 1994.

Rejmanek, M. and M. J. Pitcairn. *When is eradication of exotic pest plants a realistic goal?* in Veitch, C. R. and M. N. Clout (eds). *Turning the tide: the eradication of invasive species.* Proceedings of the International Conference on Eradication of Island Invasives. ISSG of IUCN, 2002.

Wilcove, D. S., D. Rothstein, J. Dubow, A. Phillips, and E. Losos. *Quantifying threats to imperiled species in the United States.* BioScience 48(8): 607-615, 1998.

**Marilyn Jordan, Ph.D.,** is a conservation scientist for The Nature Conservancy.

# Tale of a Ragged Fringe

John E. Potente and Tom Horton

## Chapter 4

(Continued from LIBS Quarterly Newsletter, Vol. 13, No. 4)

An occasional firecracker broke the serenity of late afternoon. Independence day was near and the overanxious were tossing their tiny lit saltpeter packs into the air. But a distant rumbling, miles to the west, brought a faint smile to my face. A much better show was on its way. The warm summer air was feeding mountains of cumulonimbus formations that were herding, unstoppable, this way.

The clouds were amassing with great omen. They soon took control of the skies and began to hurl mighty bolts of electric current between themselves. Thunder shook the ground below and bursts of lightning sent the doves, robins, and rabbits racing for cover. Within minutes all darkened severely and the crashing clouds drenched the sky. The thunderstorms of July had begun.

I looked out under the tupelo and wondered how the Ragged-fringed Orchid (*Platanthera lacera*) was receiving the torrent. The fragile orchid plant, with a candelabrum of buttoned-up flower buds, was under siege of rushing rainfall. An orchid that was susceptible to a passing heel, a trotting turtle or a crouching groundhog. How was it doing?

I went out into the storm to watch the orchid in this teaming tempest. As I approached, a chill much colder than July rushed in and the rain upon the leaves became damaging loud. The higher rains that were repeatedly pushed upward into the cooler altitudes had frozen and were now falling as spinning marbles of hail at 60 miles an hour.

The winds whipped the forest edge and were bending the treetops to their breaking limits. The besieged fragile orchid conceded to the summer outburst

and looked straight up into the onslaught. Its broad leaves gave with the heavy rains and frozen spherulites and sprung back into position after each pass. The flower stalk stood upright with occasional rocking as if to dodge the iced bullets.

The storm did not last long and departed with the same unchallengeable power with which it came. It brought water to the dry soil. The mosses, which had looked quite deathly, were back lush and vibrant within minutes. As the skies cleared, the orchid and the remarkably resurgent mosses were quite thankful for this quick midsummer frosty drink.

The Ragged-fringed Orchid was now into its third year post-transplantation on the Native America preserve. Four aspiring shoots emerged in early spring and two of those shoots graduated to bear the anticipated stalks of cascading orchid flowers. Above ground the orchid was showing promising signs of proliferation (from an initial two shoots presented in its first year).

And just how did this relate to the story that was progressing underground? When I first set out to transfer the orchid from Nissequogue to Hauppauge in 2002, I secured a large burlapped root ball one meter in diameter for a plant that had a root bulb probably only an inch or two long, aware that a fungus in the soil was needed to sustain the plant. I wanted to insure an ample supply of the anonymous soil fungus that was partnering with the Ragged-fringed Orchid below ground.

And now in the summer of 2004, how were the roots faring? Was there still a fungal affiliation? The mossy ground covering of the translocated soil patch had changed. While this may simply have been a succession that was taking place in the surface moss ecosystem, it may have also heralded a shift or depletion of the sustaining soil fungus, for the rhizoids of the mosses

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also establish a symbiotic relation with underground fungi. While the orchid seemed healthy above ground, was it still usurping fungus in the darkness of the deeper soil?

After the storm passed along, and the hailstones melted in retreat, I sat down beside the orchid and slowly scraped away with a clay-carving tool at the soft soil beside the tallest orchid. With each careful tiny excavation, I held my breath as I came closer and closer to the heart of the orchid. For while the breathtaking flowers are the lure and reputation of the native orchids, it is the unseen subterranean root that is the soul of its mysteriousness. For it is here that the orchid decides whether or not it will reemerge.

With barely any pressure, I let the carving instrument pass over the soil until I felt a slight resistance.

A little over an inch below the surface, an obstruction let me know I had reached the root. I teased grains of soil away and paused as I witnessed the brown bent shape that nurtured the orchid above.

With a fair amount of apprehension and apology, I straddled a small rhizome with the sharp cutting ends of a surgical scissors and snipped off an inch and a half. I immediately looked up from the small depression in the soil, up the fleshy orchid leaves and to the top of the flower stalk. The orchid remained quiet, yet I thought I saw it falter. Or more likely, it was me that flinched.

I covered the exposed roots with the small mound of soil I had made beside and pressed the ground with my fingertips. In the name of research, I justified my transgression and bottled the fine root section in a waiting jar of ethyl alcohol. The thicker brown portion stood as the solid aged patron, while the whiter



Photo by John E. Potente

#### Exposing the orchid root

young filamentous root ends waved in innocence in the immortalizing alcohol.

I lifted the jar to the sky and peered through the translucency of the rhizomes. While I could not yet see, I knew that visitors within its sacred cells held the answer to its survival.

Then, like a melancholy parent, I sent it off to college: the State University of New York in Syracuse. During my work with the American Chestnut tree, I befriended a mycologist who is now assistant professor at the College of Environmental Science and Forestry.

Tom Horton and I had previous engrossing conversations on the vexing effects of an alien fungus, *Cryphonectria parasitica*, that had essentially destroyed the American Chestnut tree in its natural range. And now, with funding from Native America, we collaborated to investigate an unidentified beneficial native fungus that was helping to sustain the lives of *Platanthera lacera* (Ragged-fringed Orchids) on Long Island and elsewhere in North America.

Tom would prepare the slides and relay the electronic images back to Long Island. I checked my email somewhat more regularly, and on July 14 the image attachments arrived on my PC from Tom Horton's microscope in Syracuse, New York. My new 19-inch computer monitor was ready to show its stuff.

While orchid mycorrhizal affiliations have been known since the late 1800s, many insights are gained through the advent of transmission and scanning electron microscopes, genetic profiling, and now desktop computers. With an excited click of the mouse, a single cell of the Ragged-fringed Orchid filled the entire horizontal screen. And there within the root hair cell was the narrow encased hyphae of the fungi. I stared in amazement and jubilation.

A series of telltale images disclosed the events taking place forty paces from my back door. The first

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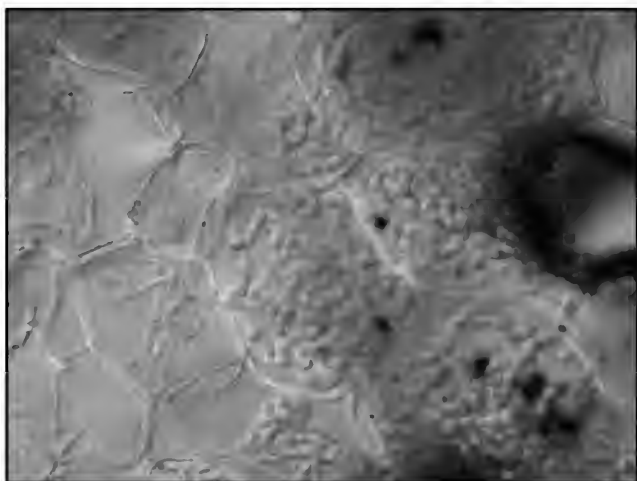


Photo by Tom Horton

Pelotons  
(Photographed using a Nikon Differential Interference  
Contrast Microscope at 400x.)

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image showed the empty cells of the thicker root cortex. These cells are older and nonconductive to fungal penetration. The second image showed the simple root hair from a younger section of the root. Within it was a healthy fungal hypha, helping to garner minerals and nutrition and making them available to the orchid. This is the site of initial entry of the fungus and indicates active mycorrhizal association taking place.

The third image showed a more mature section of the orchid root with cells tightly packed with coils of fungal hyphae called "pelotons." While the fungus enters the cell wall of the plant, it does not enter the cell's membrane. The hyphae elongate and form densely-packed convolutions, and the plant membrane expands with the hyphal growth for increased surface area and nutrient exchange capacity. The integrated mycelial portions of the fungi within the orchid roots do not engage in reproduction.

Furthermore, during different seasons, the pelotons are deliberately periodically degraded by the orchid via a chemical phytoalexin called *orchinol*. When the orchid is again receptive it openly invites or lures the fungus back into its rhizome tissue. So it is important that the associate fungus is able to reproduce in the soil in the environs of the orchid.

The fourth image shows, along with a hosted fungal cell of coiled hyphae, several large black dots. The microscope slides were stained with iodine and these are starch granules processed by the orchid. And so, as the orchid stands quiet and still, it is busily sending down sugar from the leaves to the roots for storage.


So I received my confirmation that all is proceeding well underground, at least for the time being.

The questions of the orchid's fate may go on endlessly. Just how copious is the fungal supply? Is the nearby tupelo, with its mycorrhizal marriage, of any benefit or detriment to either the orchid or the orchid fungus? Will the fungus eventually be exhausted in the

initial soil transplant? Are other soil fungi entering the translocated soil? And if so, will they supplant the orchid fungi or compete with them? Can the orchid extend its roots beyond the initial transplanted root ball or will its seeds find hospitable soil with awaiting resident fungi?

By the end of August, this year's orchid's leaves are showing their age. They are frayed, battered and slug-worn. But they are still green and pumping food down for another year.

Perhaps more significant than this beloved ragged fringe, is the underscoring of the importance of the health of soil. For the fungi that form mycorrhizal relationships need the freedom to foster not only orchids, but most higher plants everywhere.

Note: This study is being funded by Native America ([www.nativeamerica.org](http://www.nativeamerica.org)). 

#### REFERENCES:

Smith, S.E. and D.J., Read, *Mycorrhizal Symbiosis*, 2<sup>nd</sup> Ed., Academic Press, 1997.

Biechele, Lance T., *Secret Relationships Among our Native Orchids*, Long Island Botanical Society Newsletter, Vol. 11. No. 2, 2001.

Potente, John E., *Tale of a Ragged Fringe*, Long Island Botanical Society Newsletter, Vol. 13, No. 4, 2003.

Trudell, Steve, *Mycorrhizas: Why are they so successful?* Mushroom the Journal, Spring 2001.

**John E. Potente** is the director of Native America, an organization devoted to the understanding and protection of native plants of America.

**Tom Horton** is an assistant professor at the SUNY Syracuse College of Environmental Science and Forestry.

## From *Epidendrum* to *Epipactis*

Ray Welch

I blame Rex Stout. Not for my addiction to trashy novels (that predated him), but for my interest in orchids. Stout's fictional Nero Wolfe, a fat, inert detective, was fond of beer and passionate about orchids. A teenager, I was then too young for (legal) beer, but not too young for getting involved in orchids myself. So I did—the cultivated kind. Living in the South made keeping them happy easier than on Long Island and there were some local growers to patronize.

My first orchid of all was a nonshowy native epiphyte, *Epidendrum* (now *Encyclia*) *tampense*, but I went on to add *Cattleya* hybrids and *Vanda* hybrids to my collection. My small accumulation of 20 or so had to be sold a couple of years later when the family moved, but I kept one *Phalaenopsis* hybrid as a memento, and it followed me around for a quarter century, spending winters on my office windowsill and summers under a tree

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in my back yard (who said orchids were hard to grow?), before it mysteriously died one year. I replaced it a decade back with a similar *Phalaenopsis*, and that's my "orchid collection" to this day. Since then my orchid interest is mostly in our native, terrestrial species.

Over the years I have met *Spiranthes* in Tennessee, *Calypso* in Colorado, *Corallorhiza* in Florida, *Habenaria* spp. here and there, uncommon *Cypripedium* spp. in Maine, *Liparis* in New Hampshire, *Calopogon* and *Pogonia* on Long Island and *Cypripedium acaule* (ho, hum!) everywhere. But most of these encounters were occasional—many just single sightings, charged with excitement, not unlike my sighting of a Sharp-shinned Hawk at my bird feeder, where the usual crowd is Northern Cardinals and Blue Jays and House Sparrows. And while orchid sightings remain infrequent in my life, an orchid has been added to my house lot flora while my eyes were turned elsewhere. But my new orchid is, it seems, botanically less of a Snowy Owl than a Starling.

One summer day, three years ago, on opening my front gate, I chanced to look down the front fence line. Along this line my very casual attitude towards lawn maintenance lets grow up those things whose proximity to the fence bottom spares them shredding by the mower. I have Winter Grape, Virginia Creeper, Feverfew, Bittersweet (two kinds: *Solanum*, *Celastrus*),



Photo by Ray Welch

Broad-leaved Helleborine, *Epipactis helleborine*

etc. But right by the gatepost, inches from the drive's concrete, was something new, a foot and a half tall, and I (almost) instantly recognized it as Broad-leaved Helleborine, *Epipactis helleborine*. I have met the plant several times in New England and always associated it with shaded, damp, low spots. What was an *orchid* doing in the dry, sandy, sterile soil that is my lot's condition?

A call to Eric Lamont, and a consultation of his atlas of Long Island's orchids (Lamont, 1996), let me know that it is not unheard of on the Island, with about 30 stations or records as of 1996, with apparently no records prior to the early 1960s.

Eric was kind enough to add my observation to his list, but I wondered, "What kind of orchid is *E. helleborine*?" About all I knew was that it was, most notably, North America's only widespread *nonnative* orchid, but I soon learned that it is sometimes called "Weed Orchid," and that said something about it that further intrigued me. This orchid is clearly something *different* from my usual perception of orchids as something precious and uncommon. *Weed?*

*Epipactis helleborine* is presently recorded in all of the Northeastern states, and in nearly all of the near Midwest, in a few states in the Far West, but is largely absent from the Great Plains states and all of the Deep South. (Web Ref. No.1). Closer to home, *Epipactis helleborine* has records in almost every county of New York, as the distribution map (Web Ref. No. 2) from the NYFA Web site shows. *E. helleborine*, it turns out, is *not* the only nonnative orchid to have naturalized in this country. For example, *Epipactis atrorubens* (Royal Helleborine) has naturalized in Vermont and *Epipactis palustris* (Marsh Orchid) has naturalized in New York, apparently rather sparingly.

*E. helleborine* apparently was first recorded in North America near Syracuse in 1879, although I could find no reference confirming the date. By the 1930s it was termed a "persistent invader of new areas in central New York, rapidly increasing," and by the early 1930s had invaded both natural and cultivated sites there and was growing "luxuriously in disturbed... habitats" (Young, 1933).

The genetic structure of naturalized *E. helleborine* populations is provoking. One would think that if its introduction to this country was an accidental and rare event, the genetic structure of the populations descended from a small number of original plants should be rather uniform. It is not, and Squirrel *et al.* (2000) say, "There was no evidence for a genetic bottleneck associated with the introduction of *E. helleborine* to North America." There is something amiss here, but the causes and implications of this unexpected genetic variability are something that I cannot usefully specu-

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late.

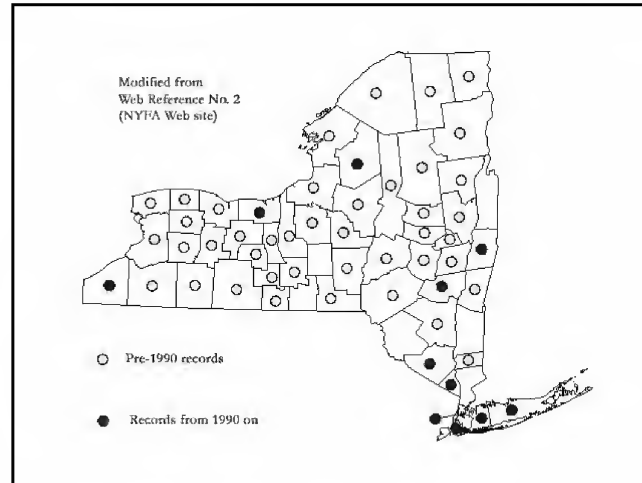
*E. belleborine* seems to be remarkably adaptable, and for an orchid, phenomenally unpicky as to a preferred habitat, and this is probably one of the reasons for its astonishing success at naturalizing in this county, as it:

thrives in a variety of habitats: most types of forests from young to mature and from deciduous to coniferous relatively open at ground level with little other vegetation nearby. Also found in wet-mesic soils of swamps and stream edges, gravelly roadsides, sheltered sandy beaches, old lawns, and gardens. Common in pine plantations. Rooted in soils from pure clays and sands to loam, organic substrate in swamps. Abundant in areas of calcareous bedrock. (Web Ref. No. 3)

Its reproductive biology appears to have a significant effect on its success as well. At first I was unsure if *Epipactis* was a nectar-producing orchid or not—some, such as *Cypripedium acaule* are not—and while I suspected it did produce nectar, as inspection of my photographs showed glistening areas on the complex central structure, an observation confirmed by Neiland and Wilcox (1988), where the site of nectar production in this genus is called a “hypochile.” I was not sure until I read Jeffrey *et al.* (1970) where the sugar contents of many orchid flowers were listed, and *Epipactis* was among them.

All orchid exudates (nectars) appear to contain fructose, glucose, and sucrose, and often others more obscure. *Epipactis* contains the three, plus melibiose (I’d never heard of it either), and to what end I have no idea, but Jeffrey *et al.* say that “[t]here appears to be no relation between sugar content of orchid exudates...and their pollinators.” So, while *Epipactis* provides a reward for pollinators, I did not observe the plant during its peak of bloom for very long, and I never saw any insect on the raceme, but the major pollinator in Europe appears to be essentially just wasps (Web Ref. No. 4).

The difference in reproductive success between nectar-rewarding and nonrewarding species can be significant: “low fruit set is often thought to be characteristic of the family...perhaps because of the number of repeated observations of nonautogamous species.” (Neiland and Wilcock, 1988, and references therein). About a third of the Orchid family produce no nectar at all, and in nectarless orchids, worldwide, fruit set is quite variable, with published values from



Distribution of *Epipactis helleborine* in New York State.

near zero to nearly 70 percent. For North American species, the average is about 20 percent. There appears to be a profound disparity in pollination success between orchids that produce nectar rewards and those that do not. Those that reward are often 100 percent successful; those that do not, are often less than 10 percent successful. (Neiland and Wilcock, 1988).

My gatepost Helleborine appeared to be extremely successful at being pollinated, and almost every floret began to develop a seedpod (still maturing as of this writing). That non-nectariferous orchids often have difficulty at successful pollination and fruit set is clear to me, as I rarely find seedpods of Lady’s-slipper in our woods. *E. belleborine* is apparently noted for the success of its reproduction, although “native orchids are rare in comparison with other species...*Epipactis belleborine* produces large amounts of seed over a long period of time, and enough seed is viable to make this a common orchid in Rhode Island.” (Stuckey, 1967).

The fruiting success of my Helleborine seems to imply frequent and successful pollinator visits, and although there is no shortage of wasps in my area, and that *Epipactis* is stated more than once as being an out-crosser (e.g., Piper and Waite, 1988), I have my doubts. Although several papers imply that “a high level of cross-fertilization occurs in this species,” (Piper and Waite, 1988), some references imply that autogamy is possible (Web Ref. No. 4), and I strongly suspect this is so.

Observation of my own Helleborine was too infrequent to have anything to say about pollinator visits (I saw none), but that nearly every floret on my plant was fertilized implies (if out-crossing is necessary) that there must be a substantial population of the species in my area. I admit that the plant is not particularly con-

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spicuous, but I have never seen another, either in my yard or nearby. From this, I lean towards autogamy as highly possible (which is, of course, a “weedy” trait). As orchids go in this country, *E. helleborine* stands out as amazingly successful. But is this success such that the species should be called a weed?

In the Milwaukee area, since 1930, *Epipactis* has spread to nearby counties, and in one county it is termed a “very common and aggressive weed.” (Web Ref. No. 4). On the other hand (Web Ref. No. 5), in a report from Canada on invasive plants, *Epipactis*, present around Toronto since 1890, has spread “rapidly and widely,” and it “generally occurs scattered throughout woodlands as individuals and small groups of plants,” and the author calls it “noninvasive.”

The problems of defining the terms “naturalized” and “invasive” are considered at length in Richardson *et al.* (2000). A plant is naturalized if it “reproduces and sustains populations over many life cycles and do[es] not necessarily [my italics] invade natural, semi-natural or human-made ecosystems.” And weeds include “plants (not necessarily *alien*) that grow in sites where they are not wanted and which usually have detectable economic or environmental effects.” Richardson *et al.* call *Epipactis helleborine* a “benign invader.” So “unwelcome weed” or “benign invader”?

I am going to be generous. I will opt for “benign.” I like my gatepost orchid as much as I like my potted *Phalaenopsis*. And, so far on Long Island, I have heard of no botanist becoming fretful over this species. While Nero Wolfe would certainly sneer at *Epipactis helleborine*, it being neither rare nor particularly handsome, I do not, and esteem it for its interesting biology and ecological success. Still, I yet share with him, many years later in life from my first meeting him, at least one trait: We both like our beer poured “just so.”



#### WEB REFERENCES:

Web Ref. No. 1:

[http://plants.usda.gov/cgi\\_bin/plant\\_profile.cgi?symbol=EPHE](http://plants.usda.gov/cgi_bin/plant_profile.cgi?symbol=EPHE)

Web Ref. No. 2:

[http://www.nyflora.org/atlas/maps/\\_Monocot\\_other/Orchidaceae/Epipactis\\_helleborine.htm](http://www.nyflora.org/atlas/maps/_Monocot_other/Orchidaceae/Epipactis_helleborine.htm)

Web Ref. No. 3:

[http://www.osrbg.ca/files/EPI\\_HEL.HTM](http://www.osrbg.ca/files/EPI_HEL.HTM)

Web Ref. No. 4:

<http://www.botany.wisc.edu/Orchids/Epipactis.html>

Web Ref. No. 5:

<http://24.43.80.213/nbs/IPCAN/impact.html>

#### PRINT REFERENCES:

Jeffrey, D. C., J. Arditti, H. Koopowitz. *Sugar content in floral and extrafloral exudates of orchids: pollination, myrmecology and chemotaxonomy implication.* New Phytologist, Vol. 69, No. 1, pp.187-195, 1970.

Lamont, E. *Atlas of the orchids of Long Island, New York.* Bull. Torr. Bot. Club, Vol. 123, No.2, pp. 157-166, 1996.

Neiland, M. R. M., C. C. Wilcock. *Fruit set, nectar reward, and rarity in the Orchidaceae.* Am. Jour. Bot., Vol. 85, No. 12, pp. 1657-1671, 1998.

Piper, J. G., S. Waite. *The gender role of flowers of broad leaved Helleborine, Epipactis helleborine (L.) Crantz (Orchidaceae).* Functional Ecology, Vol. 2, No. 1, pp. 35-40, 1988.

Richardson, D. M., P. Pysek, M. Rejmanek, M. Barbour, F. Panetta, C. West. *Naturalization and invasion of alien plants: concepts and definitions.* Diversity and Distributions, Vol. 6, No. 2, pp. 93-107, 2000.

Squirrel, J., P. Hollingsworth, R. Bateman, J. Dickson, M. Light, M. MacConnail, M. Tebbitt. *Partitioning and diversity of nuclear and organelle markers in native and introduced populations of Epipactis helleborine (Orchidaceae).* Am. Jour. Bot., Vol. 88: pp. 1409-1418, 2001.

Stucky, I. H. *Environmental Factors and the growth of native orchids.* Am. Jour. Bot., Vol. 54, No. 2, pp. 232-241, 1967.

Young, V. A.. *The distribution of Serapias helleborine in Central New York.* Science, New Series, Vol. 77, No. 2006, pp. 560-561, 1933.

**Ray Welch** is a professor in the biology department at Suffolk County Community College.

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## Plant Sightings

On the LIBS field trip to Calverton Ponds on July 11, 2004 (led by Jenny Ulsheimer and Tom Cullen, and attended by Barbara Conolly, Helen McClure, Skip and Jane Blanchard, and Ray Welch), Barbara Conolly and Skip Blanchard reported the following sightings:

### TREES

*Acer rubrum* – Red Maple  
*Castanea dentata* – American Chestnut  
*Nyssa sylvatica* – Tupelo  
*Pinus rigida* – Pitch Pine  
*Quercus alba* – White Oak  
*Sassafras albidum* – Sassafras

### SHRUBS

*Amelanchier canadensis* – Shadbush  
*Cephalanthus occidentalis* – Buttonbush  
*Chamaedaphne calyculata* – Leatherleaf  
*Clethra alnifolia* – Sweet Pepperbush  
*Comptonia peregrina* – Sweetfern  
*Decodon verticillatus* – Water-willow  
*Gaultheria procumbens* – Wintergreen  
*Gaylussacia baccata* – Black Huckleberry  
*Gaylussacia frondosa* – Dangleberry  
*Ilex glabra* – Inkberry  
*Ilex verticillata* – Winterberry  
*Lyonia mariana* – Staggerbush  
*Myrica gale* – Sweet Gale  
*Myrica pensylvanica* – Bayberry  
*Smilax rotundifolia* – Greenbrier  
*Vaccinium angustifolium* – Late Lowbush Blueberry  
*Vaccinium corymbosum* – Highbush Blueberry  
*Vaccinium macrocarpon* – Large Cranberry  
*Vaccinium pallidum* – Hillside Blueberry

### HERBACEOUS PLANTS – Grasses, rushes, and sedges

*Carex sp.* – Sedge  
*Carex swanii* – Sedge  
*Cyperus sp.* – Flat Sedge  
*Deschampsia flexuosa* – Hair Grass  
*Juncus canadensis* – Rush  
*Juncus tenuis* – Path Rush  
*Rhynchospora alba* – White Beakrush  
*Rhynchospora capitellata* – Beakrush  
*Rhynchospora inundata* – Beakrush  
*Rhynchospora macrostachya* – Tall Beakrush  
*Scirpus sp.* – Bulrush

### HERBACEOUS PLANTS – Flowering plants

*Drosera filiformis* – Threadleaf Sundew  
*Drosera intermedia* – Spatulate-leaved Sundew  
*Eriocaulon aquaticum* – Pipewort (Hatpins)  
*Euthamia tenuifolia* – Slender Fragrant Goldenrod  
*Gratiola aurea* – Golden Hedge-hyssop

*Helianthemum canadense* – Frostweed  
*Hypericum canadense* – Canadian St. Johnswort  
*Lachnanthes caroliniana* – Redroot  
*Linaria canadensis* – Blue Toadflax  
*Lycopus ? amplexans* – Water-horehound  
*Melampyrum lineare* – Cow-wheat  
*Monotropa uniflora* – Indian Pipe  
*Nuphar variegata* – Northern Bullhead Lily  
*Nymphaea odorata* – Fragrant Waterlily  
*Rhexia virginica* – Meadow Beauty  
*Rumex acetosella* – Sheep Sorrel  
*Triadenum virginicum* – Marsh St. Johnswort  
*Utricularia cornuta* – Horned Bladderwort  
*Utricularia ?intermedia* – Flat-leaved Bladderwort  
*Utricularia purpurea* – Purple Bladderwort  
*Xyris ?smalliana* – Yellow-eyed Grass

### FERNS AND FERN ALLIES

*Lycopodium alopecuroides* – Foxtail Clubmoss  
*Lycopodium appressum* – Appressed Clubmoss  
*Pteridium aquilinum* – Bracken Fern  
*Woodwardia virginica* – Virginia Chain Fern

### IN OTHER SIGHTINGS:

Skip Blanchard reports a population of Chaffweed (*Anagallis minima*=*Centunculus minimus*), a tiny, introduced plant in the Primrose family, related to the better-known Scarlet Pimpernel. It was found in a Huntington Bay back yard, in a closely mowed area near the edge of a pond, where it was associated with *Lindernia dubia* and *Ludwigia palustris*. To his knowledge, the only other New York report is from Albany County.

John Potente reports four plants of *Agalinis setacea* in his front yard in Hauppauge. He believes them to be the offspring of the 14 plants that emerged there last year on their own after the soil was overturned exposing them from the sandy soil seed bank.

Barbara Conolly reports 31 *Spiranthes cernua*—Nodding Ladies'-tresses—in a new location in an old stabling area in Locust Valley. (None have appeared there since seven or eight years ago.) Abundant Fern-leaved Yellow False Foxglove—*Aureolaria pedicularia*—in the same location.

During a visit to Moore's Woods to see the Crane-fly Orchid (*Tipularia discolor*), Eric Lamont and two British botanists, Michael and Carol Parsons, observed a small specimen of the Weed Orchid (*Epipactis helleborine*) with short, pointed leaves. Eric thought it was just a depauperate specimen, but Mike knew it from Europe as subspecies *minor*, a taxon apparently never before reported from

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North America. The Brits got very excited seeing Long Island fields dotted with Deptford Pink (*Dianthus armeria*), a very rare native plant in England.

Eric Lamont reports two new invasive weeds from the Hempstead Plains: Black Swallow-wort (*Cynanchum nigrum*) and Garlic Mustard (*Alliaria petiolata*). The plants were uprooted, but future assessment and management is needed.

Rich Kelly reports *Verbascum nigrum* at Planting Fields.


Betsy Gulotta and Marilyn Jordan counted 584 plants of Sandplain Gerardia (*Agalinis acuta*) from the north side of Hempstead Plains Preserve, but only three individuals from the south side.

Eric Lamont and Richard Stalter report hundreds of flowering individuals of Spring Lady's Tresses (*Spiranthes vernalis*) from Plum Island on August 12. This population may be the largest in New York.

During his late summer rare plant work on Long Island Steve Young found new occurrences of *Aster subulatus* at

Conselyas Pond in southern Queens and in Woodmere Park in Western Nassau County. He and Andy Greller also saw *Aster subulatus* in Alley Pond Park. Two new occurrences of *Eupatorium serotinum* were found in Woodmere Park and at Hempstead Lake. At Hempstead Lake, a new occurrence of *Ludwigia sphaerocarpa* was found and the historical record for the rare *Trichostema setaceum* was determined to be the common *T. dichotomum*. A resurvey of eight localities of *Eupatorium album* var. *subvenosum* in Suffolk County located only two remaining populations. The others had succumbed to succession or habitat alteration.

Guy Tudor reports that Mile-a-Minute Weed (*Polygonum perfoliatum*) is rapidly spreading along Narrow River Road near Orient Point. Steve Glenn first located this population in 2000, but Guy now reports that it may soon displace and eliminate several native species including Joe-Pye Weed (*Eupatorium dubium*), Giant Sunflower (*Helianthus giganteus*), and Swamp Milkweed (*Asclepias incarnata*).

Andy Greller reports more than a dozen individuals of Bradford Pear (*Pyrus calleryana*) spontaneously colonizing a field at Froelich Farm Preserve in Huntington Township. This species is not included in Mitchell and Tucker's (1997) *Revised Checklist of New York State Plants*. 

## Letters

July 19, 2004

July 26, 2004

Dear Editor:

I read with interest, in "Society News," of my fellow members' recent experiences with *Cardamine impatiens*.

Two years ago, I found (just) one "mystery mustard" along the Raritan Canal in New Brunswick, N.J. When Karl Anderson identified voucher for me, I thought, "Just another odd escape." However, this May, we noted that an entire long stretch of the towpath was blanketed with it, at least along the edges. In just two years, it had managed to multiply amazingly quickly.

Even more dismaying, we later saw it at beginning of trail at Hacklebarney State Park, Morris County—a very rich botanical park with Yellow Lady's-slipper, showy Orchis, Obolaria, and many other scarce flowers. This does not bode well, and I completely agree with Skip's remark re: Garlic Mustard.

Guy Tudor  
President  
New York City Butterfly Club

Dear Editor:

I am sending the species list of our last field trip—to Calverton Ponds on July 11—because it was such a special trip. I worked on the list with Skip and he agreed with my feeling of refreshment when we left the preserve. It was not so much what we saw—and that was really great: those Sundews and Bladderworts and Heaths—but what we didn't see.

For instance, we listed only six trees. None of us noticed Black Cherry, Scarlet Oak, Black Oak, Willows, American Holly, or White Pine.

We listed 19 shrubs, but failed to encounter Scrub Oak, either Alder, Sheep Laurel, Bearberry, Trailing Arbutus, Blackberry, or other brambles, Witherod, Arrowwood, Swamp Azalea, Swamp Rose, Poison Ivy, or any Sumacs or Grapes.

On the list of flowering herbs, in the 21 species we failed to see Jewelweed, Cat-tails, Rosy Coreopsis (perhaps too early for that), any umbels, Arrowheads, Pickerelweed, Bluecurls, or Joe-Pye-Weeds; in fact almost no composites of any kind except for the Slender Fragrant Goldenrod (in tiny beginnings).

On the Fern list, we list only two and don't have Marsh fern (I think we must have overlooked it!)

Of course it is a depauperate area of the pine barrens and you wouldn't expect a jungle of species, but it

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## Field Trips

**SATURDAY, OCTOBER 23, 2004, 10:00 A.M.**

*Cunningham Park, Hollis Hills-Fresh Meadows,  
Queens County, New York*

Trip Leader: Andy Greller

The ponds of this "knob" (hill) and "kettle" (ponds) site on the Harbor Hill moraine have a variety of acid-tolerant herbs and shrubs, including spike-rush (*Eleocharis*), mosses and liverworts, as well as a wide variety of trees and shrubs. Fruits of many wildflowers should be mature, and we will be able to compare many aster family species, among others. We should also see a good diversity of ferns. We will also evaluate the spread of invasives; one is umbrella magnolia (*Magnolia tripetala*). This is a joint trip with the Torrey Botanical Society.

**Directions:** Meet at the eastern edge of the park, at 209th St. and 82nd Ave. Take Grand Central Parkway to the Clearview Expressway, Northbound (Exit 21 N). Take first exit, Union Turnpike, and keep to the extreme right. On Union Turnpike make the first right (less than 50 yards from exit) onto Hollis Hills Boulevard. Proceed a few hundred yards to 82nd Avenue and park. **OR** take the Long Island Expressway to the Clearview Expressway (295) South (follow signs to Hillside Avenue). Exit Clearview Expressway at Union Turnpike. Make a left at the light, going under the Expressway, then a right onto Hollis Hills Boulevard. Proceed to 82nd Avenue and park there.

For more information, contact Andy.

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was so refreshing to be in a habitat that is unique and pure. Because what is really and significantly missing from the list is EXOTICS!

We didn't see any Japanese Honeysuckle, Japanese Knotweed, Purple Loosestrife, Phragmites, Oriental Bittersweet, Porcelainberry, Wisteria, English Ivy, Buckthorn, Norway Maple, Heal-all, Mugwort, Garlic Mustard, or Multiflora Rose.

I hadn't realized how accepting I had become in other preserves where at least some exotics are expected as the norm. What a relief it was to be, not in a jungle, but in a habitat where everything is functioning as it was created to function and not spoiled in some way by the hand of man. What a place of peace it was!

Barbara Conolly



## Upcoming Programs

**October 12, 2004\* Tuesday, 7:30 p.m.**

MICHAEL NEE: "HISTORY OF THE VEGETATION OF RICHLAND COUNTY, WISCONSIN"

Michael's 35 years of work on the flora of Richland County brings together some historical and present day aspects of the study of vegetation in Richland County (settled in 1840s) which would compare and contrast with current floristic efforts on Long Island (settled in 1630s). Michael is an Associate Curator at the New York Botanical Garden. He has had extensive tropical field experience in Latin America, and his research specialties include the Solanaceae and the Cucurbitaceae.

Location: Bill Paterson Nature Center,  
Muttontown Preserve, East Norwich

**November 9, 2004\* Tuesday, 7:30 p.m.**

DANIEL KARPEN: "OLD GROWTH FORESTS IN THE NEW YORK METROPOLITAN AREA"

This talk will be an expansion of the topic from his article (LIBS *Quarterly Newsletter*, Vol. 14, No. 1) with discussion about very large, mature trees and bark characteristics of such trees. Daniel is an environmental and energy conservation consultant, and has a degree in Forestry from the University of Washington.

Location: Bill Paterson Nature Center,  
Muttontown Preserve, East Norwich

### EXECUTIVE BOARD MEETING

A meeting of the Executive Board will be held on 9 November 2004 at 6:15 pm (before the monthly meeting and program at Bill Paterson Nature Center, Muttontown Preserve). All members are welcome

**December 14, 2004 Tuesday, 7:30 p.m.**

PETER WRANY: "LANDSCAPE ECOLOGY; ROAD-TRIPPING USA"

Share in Pete's eco-travels from 2004. "The Roving, Raving Naturalist," Pete is a Research Associate at the New York State Museum and an avid herpetologist.

Location: Bill Paterson Nature Center,  
Muttontown Preserve, East Norwich

\* Refreshments and informal talk begin at 7:30.  
Formal meeting starts at 8:00 PM.

**THREE SWANS SLEEPING**

Three swans sleeping, floating on black water,  
 heads laid back on gently melted necks,  
 bills tucked under snowy wings,  
 quick black eyes  
 occasionally checking on the scene.

Morning sunlight bathed their resting forms.  
 Motionless, trustful, dignified, at peace;  
 just the way they should be.

Days later I hiked around three ponds,  
 Sandy, Fox, and Block,  
 deep in the Pitch Pines of the Barrens.  
 They were carpeted with Bladderworts and Water-lilies,  
 edged by Sweet Gale and Sassafras and Sundews in full bloom;  
 thronged by fifteen kinds of dragonflies.  
 Lady's-slipper Orchid leaves spread out near Sweetfern clumps;  
 Dangleberry, Huckleberry, Shinleaf: their aroma  
 pungent over all.

Underfoot the duff was deep.  
 All that afternoon  
 I walked slowly, softly, without a sound,  
 wondering why I felt so calm.

At the end it came to me –  
 not what I saw but what I didn't see  
 left me completely undisturbed.  
 Not one exotic or invasive plant  
 had infiltrated that special place:  
 no Bittersweet, no Porcelainberry,  
 not an Oxeye Daisy, not a Buckthorn or a Honeysuckle from Japan;  
 no Reed, no Norway Maple, no mass of Purple Loosestrife,  
 not a bit of garlic Mustard, English Ivy or Wisteria,  
 no Swallowwort, no Multiflora Rose, not even one Self-heal!

How long had it been since I walked in woods  
 when I was not assailed  
 by the sight of plants that shouldn't be there?  
 Next to the jungles rampant in preserves I know and hold dear,  
 this place seemed pure and undefiled.  
 I left refreshed and filled with peace.

Like three swans, three ponds –  
 just the way they should be.

*Barbara Conolly*  
 2004

**Letters to the Editor,  
 Articles, and News items**  
 may be submitted to:  
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